

# **Health Benefits of Arginine**

By Harry Elwardt, N.D., Ph.D.

The following report, which is backed up by incredible scientific research, shows the many health benefits of increased arginine in the human body. Arginine is a semi-essential amino acid, which is produced in the liver and can be found in protein rich foods like red meat. Medical research has now shown that by simply supplementing with 5 to 6 grams of arginine everyday, all of the following is possible:

## **Aging Process**

- Arginine inhibits one of the primary mechanisms of the aging process (it inhibits the process of cross-linking) (1).
- Arginine increases the release of the human growth hormone (HGH) (also known as the anti-aging hormone) from the pituitary gland (2)

## **Cardiovascular System**

- Arginine improves blood circulation, improves exercise capability and facilitates vasodilation in angina patients (3)
- Arginine helps to prevent atherosclerosis and reduces the severity of existing atherosclerosis (4).
- Arginine inhibits the adhesion of monocytes to the endothelium (an underlying event in the course of atherosclerosis) (5).
- Arginine improves blood circulation (by stimulating the production of nitric oxide, an endogenous neurotransmitter that helps to prevent vasoconstriction and which initiates vasodilation by relaxing the smooth muscle cells of the blood vessels) (6).
- Arginine helps to prevent abnormal blood clotting (by stimulating the production of plasmin and by increasing vasodilation) (7)
- Arginine helps to prevent free radicals-induced damage to the lining of blood vessels (by enhancing the production of nitric oxide in blood vessels) (8)
- Arginine significantly increases stroke volume and cardiac output (without effect on heartbeat rate) in congestive heart failure patients. It also increases vasodilation (leading to increased blood circulation) in congestive heart failure patients (9).
- Arginine reverses consequences of coronary heart disease (10).
- Arginine lowers blood pressure in some hypertension patients (by facilitating the body's production of nitric oxide (NO) and by inhibiting the angiotensin converting enzyme (ACE)) (11).
- Arginine reverses adverse effects of high blood pressure (12).
- Arginine decreases high blood pressure (13).
- Arginine reduces pulmonary blood pressure and improves blood circulation in pulmonary hypertension patients (14).
- Arginine increases walking distance in intermittent claudication patients (15).

- Arginine restores normal endothelial function in hypercholesterolemia (16).
- Arginine improves walking distance in peripheral vascular disease (17).
- Arginine improves outcome after bypass surgery (18).
- Arginine reduces blood clots and strokes (19)
- Arginine helps prevent restenosis after angioplasty and bypass (20).
- Arginine may give protection against size of heart attack (21).
- Arginine improves heart failure (22)
- Arginine improves peripheral vascular disease (23).

### **Digestive System**

- Arginine deficiency can cause constipation.
- Arginine supplementation may decrease the incidence of gallstones.
- Arginine reduces intestinal permeability (due to arginine's role in the production of nitric oxide) (24).
- Arginine alleviates many cases of ulcerative colitis (by promoting the healing of the ulcers that occur in the colon of ulcerative colitis patients) (25).
- Arginine may improve irritable bowel syndrome (IBS) (26).
- Arginine reduces ulcers (27).
- Arginine helps prevent post surgical damage after intestinal manipulation (28).
- Arginine improves outcome in sepsis (29).

### **Excretory System**

- Arginine alleviates the pain and discomfort associated with interstitial cystitis (30).
- Arginine significantly improves the function of the kidneys and helps to prevent age-related degradation of the kidneys (31).

### **Immune System**

- Arginine helps to prevent bacterial & viral diseases in persons with suppressed immune systems (32).
- Arginine blocks the formation of some forms of cancer (arginine inhibits the cellular replication of 24 different types of cancer in animals) (33).
- Arginine boosts the ability of the immune system to fight breast cancer (34).
- Arginine lowers tumor protein synthesis and tumor growth rate in liver cancer patients (35).
- Arginine inhibits the further growth of some types of sarcomas (36).
- One of the means by which arginine counteracts cancer is by reducing the activity of ornithine decarboxylase, an enzyme that is associated with some types of cancer. \*  
Caution: Arginine is also speculated to exacerbate some types of cancer, however this is not well proven.
- Arginine improves outcome of cancer treatment (37).
- Arginine (in non-excessive quantities) stimulates numerous aspects of the immune system (38):

- Arginine stimulates the production of helper T-cells (39).
- Arginine stimulates the activity of lymphocytes and also stimulates their production by the thymus gland (40).
- Arginine increases the activity (cytotoxicity) of NK lymphocytes. (41).
- Arginine stimulates the production of T-lymphocytes within the thymus and makes them more active and effective (42).
- Arginine increases the size of the thymus, stimulates the production of lymphocytes by the thymus and restores the production of thymic hormones to youthful levels (43).
- Arginine helps to counteract inflammation (44).
- Arginine accelerates the ability of the immune system to recover from surgery (45).
- Arginine improves sickle cell disease (46).

### **Metabolism**

- Alkalosis can occur as a result of arginine deficiency (47).
- Arginine exerts antioxidant effects that scavenge superoxide free radicals (48).
- Arginine lowers total serum cholesterol levels (49).
- Arginine lowers serum low-density lipoprotein (LDL) levels (50).
- Arginine inhibits the process of cross-linking (51).
- Arginine reduces insulin resistance and improves blood sugar disposal in diabetes mellitus type 2 patients (52).
- Arginine reduces insulin resistance (53)
- Arginine improves diabetes and reverses damage caused by diabetes (54).
- Arginine may prevent diabetes (55).
- Arginine increases oxygen uptake in the lungs in persons with hypoxia (due to its role in the production of nitric oxide, which in turn improves blood circulation via vasodilation) (56):
- Arginine increases oxygen uptake in the lungs in persons with altitude sickness (due to its role in the production of nitric oxide, which in turn improves blood circulation via vasodilation) (57).
- Arginine improves asthma (58).
- Arginine helps to detoxify the liver and alleviates cirrhosis. Liver malfunction can occur as a result of arginine deficiency (59).
- Arginine lowers elevated serum triglyceride levels (60).
- Arginine alleviates obesity and facilitates weight loss (by stimulating the release of human growth hormone (HGH) from the pituitary gland) (61).

### **Musculoskeletal System**

- Arginine facilitates the healing of fractures (62).
- Arginine facilitates muscle growth (by inhibiting muscle loss) and is required for the transport of the nitrogen used in muscle metabolism (63).
- Muscle weakness can occur as a result of arginine deficiency (64).

- Arginine may prevent and alleviate osteoporosis (by stimulating the release of human growth hormone (HGH) which is an important mediator of bone formation and bone turnover; it also stimulates nitric oxide synthesis which is a potent inhibitor of osteoclasts that cause the resorption of bone) (65).
- Arginine causes the relaxation of smooth muscle (by functioning as a precursor for nitric oxide production) (66).
- Arginine improves muscle performance (67).
- Arginine improves glucose uptake into muscle cells (68).

### **Nervous System**

- Arginine may be useful for the treatment of Alzheimer's disease (due to its ability to repair damaged axons by increasing polyamines levels) (69).
- Arginine is essential for the regeneration of damaged axons of neurons (its role appears to be as an agent for degrading proteins that have been damaged through axon injury) (70).
- Arginine facilitates the potentiation of long-term memory (by stimulating the production of nitric oxide (NO) - a neurotransmitter responsible for the potentiation (storage) of long-term memory (71).
- Arginine improves memory and cognitive functions (72).
- Arginine improves pituitary responsiveness and modulates hormonal control (73)

### **Sexual System**

- Arginine alleviates male impotence (by stimulating the production of nitric oxide, the endogenous chemical that stimulates erections in males) (74).
- Arginine alleviates male infertility by improving sperm count and sperm motility (due to its involvement in the manufacture of endogenous spermidine) (75).
- Arginine enhances (male and female) sexual desire (libido) (76).
- Arginine enhances (female) sexual performance - due to its role in the production of nitric oxide in the clitoris (nitric oxide facilitates female orgasm in the clitoris) (77).
- Arginine improves (male) sexual performance by providing nitrogen to the nitric oxide (NO) molecule that is integral to the achievement of erections - Arginine produces erections that are bigger, harder and more frequent. It also increases male sexual endurance, i.e. erections that last for a longer period of time (78).
- Arginine improves sperm count and sperm motility (79).
- Arginine may improve prostate function (80).
- Arginine deficiency can cause atrophy of the testicles of the testes.

### **Skin/Hair**

- Hair loss (especially male pattern baldness) can occur as a result of arginine deficiency (81).
- Arginine concentrates in the skin:

- Arginine (applied topically) increases the level of vascular endothelial growth factor in the skin (82).
- Arginine stimulates the proliferation of fibroblasts (skin cells) (83).
- Arginine is essential for and accelerates the healing of wounds (by stimulating the release of human growth hormone (HGH), stimulating the production of collagen and by stimulating the proliferation of fibroblasts) (84):
- Arginine accelerates the healing of burns (85).
- Arginine dramatically accelerates the healing of wounds in people who have undergone surgery (86).
- Arginine decreases post operative infection and length of hospital stay (87).
- Arginine improves scleroderma (88).

### **Safety**

- Arginine has been shown to be safe in the above studies as well as thousands of others (89).
- Arginine has been used safely in humans for the past 30 years. Thousands of professional athletes, as well as non-athletes, have used arginine supplements with no adverse side effects.

### **Research**

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